REMARKS

Claims 1-10 are pending in the present application. Claims 1-5, 7, 9 and 10 are rejected. Claims 6 and 8 are objected to as dependent from rejected claims.

Applicants thank the Examiner for his time and consideration during the interview with Applicants' Representative on February 27, 2006, the substance of which is incorporated herein.

Claim Rejections - 35 U.S.C. §103

Claims 1-5, 7 and 9-10 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,300,654 to Corvasce et al. in combination with Ohwaki et al. and U.S. Patent No. 6,716,749 to Noguchi et al.

The Examiner admits that Corvasce et al. does not disclose keeping substrate temperature higher than room temperature and lower than 300 °C while forming a lower layer 26 of a lower-electrode conductive film on the insulating film 24. The Examiner concludes that it would have been obvious to provide the "conditions" of Ohwaki et al. to the method of Corvasce et al. because the conditions of Ohwaki et al. would provide the ferroelectric capacitor of Corvasce et al. with the Ti (002) preferred orientation for the reliability of the electrode. With respect to claim 9, the Examiner asserts that it would have been obvious to provide the process of the combination with NH_3 plasma nitridation before lower layer of the lower-electrode conductive film is formed because the plasma nitridation would improve the surface of the insulating film as taught by Noguchi et al.

The Examiner asserts that the conditions of Ohwaki et al. would provide the ferroelectric capacitor of Corvasce et al. with the Ti (002) preferred orientation for the reliability of the electrode.

In response thereto, Applicants noted that the conditions of Ohwaki et al. that provide the preferred (002) orientation are the dual conditions of

(1) a temperature of 350 °C, and

(2) at least some content of water introduced when the substrate has reached 350 °C.

That is, Ohwaki et al. suggests that its key is not just a minimum temperature of 350 °C, but a proper atmosphere containing water vapor. By teaching that an improper atmosphere (i.e., one that does not contain H_2O) at the temperature of Ohwaki shows that it is not merely the temperature that is the key, but the temperature as well as the content of water vapor at the taught temperature. Therefore, adding the "conditions" of Ohwaki et al. to Corvasce et al. would result in the process of Corvasce et al. being conducted at a minimum temperature of 350 °C in a vapor atmosphere.

The Examiner admits that Ohwaki et al. teach that the substrate is "heated to 350°C" (first 5 lines on col. 2, page L154) and that "the adsorption state of water on the SiO_2 surface at 350°C is thought to be the key to determining the texture of the deposited Ti film" (next to last paragraph of col. 2, page L 155), but the Examiner insists that Ohwaki et al. does not limit the temperature as alleged, and maintains that choice of temperature would have been a *matter of routine optimization*, and that one would have been led to the claimed temperature through *routine experimentation* to achieve desired deposition and reaction rates.

Applicants note that there is no direct suggestion in Ohwaki et al. to vary the temperature below the taught 350 °C, and further assert that one would not have used a temperature significantly below the taught 350 °C. Applicants submit that there is no suggestion to one skilled in the art to have varied the temperature at all, much less so significantly below the taught temperature.

With respect to the significance of the difference in temperature between the claimed invention and that of Ohwaki et al., Applicants note that Ohwaki et al. teach a temperature that is almost 17% higher than the claimed upper limit of 300 °C. In light of the importance of both the water vapor content and the taught minimum temperature, Applicants submit that it is unreasonable that one skilled in the art would have been led to believe by Ohwaki et al. that the temperature could have been reduced as significantly as suggested by the Examiner.

Further, in response to Applicant's argument that the recited temperature range produces unexpected results by pointing to Fig. 2, the Examiner had asserted that Fig. 2 is not commensurate in scope with the claim because Fig. 2 does not show the amount of the lower electrode conductive film in a (002) direction obtained *at the temperature greater than 250 °C.*

In response to this assertion, Applicants respectfully note that the Inventors discussed this in the specification on page 21, final paragraph, wherein it is discussed that "As shown in FIG. 2, it is understood that the orientation of the Ti film is smallest in the case where the substrate temperature is room temperature (20 °C) and that the degree of orientation also increases as the substrate temperature increases beyond room temperature. However, the degree of orientation turns into a downward trend after becoming maximum at around 150 °C. **It can be seen by**

extending the graph that the degree of orientation at around 300 °C becomes almost the same as that at room temperature. These show that the degree of orientation of a Ti film in the (002) direction can be improved by setting the substrate temperature during the deposition of the Ti film higher than room temperature and lower than 300 °C." (emphasis added.)

Therefore, it should be clear that the Inventors have addressed the issue of temperatures greater than 250 °C, and have provided support for the upper limit of the claimed temperature range.

In view of the aforementioned amendments and accompanying remarks, Applicants submit that that the claims are in condition for allowance. Applicants request such action at an early date.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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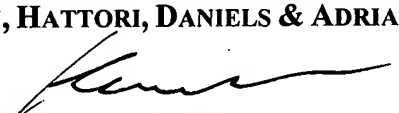

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